spraying and supplying each of said mist comprising abrasive slurry, said mist comprising additive and said mist comprising pure water into said mixing unit, and mixing them in said mixing unit to form a polishing mixture; and

supplying the polishing mixture onto said major surface of said polishing table.

REMARKS

Applicants submit that by the present Amendment and Remarks, this application is placed in clear condition for immediate allowance. At the least, the present Amendment overcomes the rejection under the second paragraph of 35 U.S.C. §112, thereby placing this application in better condition for Appeal. Accordingly, entry of the present Amendment and Remarks, and favorable consideration, are respectfully solicited pursuant to the provisions of 37 C.F.R. §1.116.

Claims 1 through 19 are pending in this application. Claims 3, 5 and 10 have been amended. Care has been exercised to avoid the introduction of new matter. Indeed, the present Amendment merely responds to issues raised by the Examiner under the second paragraph of 35 U.S.C. §112 by addressing perceived antecedent basis issues and correcting a manifest typographical error in claim 10. Applicants submit that the present Amendment does not generate any matter issue or any new issue for that matter.

A clean copy of amended claims 3, 5 and 10 appears in the Appendix hereto.

DRAWING OBJECTION

In the first enumerated paragraph on page 2 of the April 19, 2002 Office Action, the Examiner objected to the drawings pursuant to 37 C.F.R. §1.83(a), asserting that the controller for each supply unit must be depicted.

Applicants again do not agree that the depiction of such features is necessary for a proper understanding of the claimed invention. Further, the controllers are conventional and represented by the dotted lines appearing in Figs. 5 and 6. Accordingly, Applicants solicit withdrawal of the drawing objection.

CLAIM OBJECTION

The Examiner objected to claim 5 identifying a perceived informality and suggesting remedial language. By the present Amendment, the Examiner's suggestion has been implemented, thereby overcoming the stated basis for the objection.

CLAIM REJECTION

Claims 3, 5, 10, 12, 13 and 16 were rejected under the second paragraph of 35 U.S.C. §112.

In the statement of the rejection, the Examiner identified basis perceived to render the claimed invention indefinite. This rejection is traversed.

Applicants would again stress that indefiniteness under the second paragraph of 35 U.S.C. §112 is a **question of law**, not form. *Personalized Media Communications LLC v. U.S. International Trade Commission, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998); Tillotson, Ltd. V. Wlaboro Corp., 831 F.2d 1033, 4 USPQ2d 1450 (Fed. Cir.*

1987); Orthokinetics Inc. v. Safety Travel Chairs Inc., 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). Accordingly, in rejecting a claim under the second paragraph of 35 U.S.C. §112, the Examiner must provide a basis and fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art, with the supporting specification in hand, would not be able to reasonably ascertain the scope or protection defined by a claim. *In re Okuzawa, 537 F.2d 545, 190 USPQ 464 (CCPA 1976).* Significantly, consistent judicial precedent holds that reasonable precision in light of the particular subject matter involved is all that is required by the second paragraph of 35 U.S.C. 112. *Zoltek Corp. v. United States, supra; Miles Laboratories, Inc. v. Shandon, Inc., 997 F.2d 870, 27 USPQ2d 1123 (Fed. Cir. 1993); North American Vaccine, Inc., v. American Cyanamid Co., 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); U.S. v. Telectronics Inc., supra; Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ (Fed. Cir. 1986).* Applicants stress that claims must be interpreted as one having ordinary skill in the art would have interpreted the claims in light of and consistent with the supporting specification. *Zoltek Corp. v. United States, supra; Miles Laboratories, Inc. v. Shandon, Inc., supra.*

As to **claims 3 through 5,** the Examiner maintained the position that the use of alternative language "for a gas supply" renders the claims indefinite. However, as pointed out in the responsive Amendment submitted March 4, 2002, the use of an alternative expression does **not** render a claimed invention indefinite. *Ex parte Cordova, 10 USPQ2d 1949 (BPAI 1987); Ex parte Head, 214 USPQ 551 (Bd. App. 1981).* The Examiner has **not** discharged the **initial burden** of explaining **why** the alternative expression renders the claimed invention indefinite. The Examiner merely espouses

general conclusions as to the legal issue of indefiniteness under the second paragraph of 25 U.S.C. §112, but has not even attempted to explain **why** one having ordinary skill in the art would have been so **confused** as to the alternative language "or a gas supply that the scope of the claimed invention could not be determined with **reasonable** precision." Indeed, it is difficult to conceive of one having ordinary skill in the art would have been confused as to the claim language and not have recognized that the claimed apparatus comprises either a pump or a gas supply unit to create pressure in the pipe to convey a liquid.

As to **claims 5 and 10**, Applicants have amended claim 3 to provide antecedent basis for the identified language in claim 5, and have amended claim 10 to correct the manifest typographical error.

It should, therefore, be apparent that one having ordinary skill in the art would have no difficulty understanding the scope of the claimed invention, particularly when reasonably interpreted in light of and consistent with the written description of the specification. *Miles Laboratories, Inc. v. Shandon, Inc., supra.* Applicants, therefore, submit that imposed rejection of claims 3, 5, 10, 12, 13 and 16 under the second paragraph of 35 U.S.C. §112 is not viable and, hence, solicits withdrawal thereof.

Claims 1 through 19 were rejected under 35 U.S.C. §103 for obviousness predicated upon Murphy et al. in view of Chamberlin et al.

In the statement of the rejection, the Examiner **admitted** that Murphy et al. **do** not disclose the concept of supplying the liquids in a mist. The Examiner, nevertheless, concluded that one having ordinary skill in the art would have been motivated to modify the apparatus and methodology of Murphy et al. to convey the liquids in a mist in view of Chamberlin et al. **This rejection is traversed, particularly since the allegedly teaching reference to Chamberlin et al. neither discloses nor suggests supplying a mist of an abrasive slurry, additive and pure water, as in the claimed invention.**

As apparently appreciated by the Examiner, Murphy et al. neither disclose nor suggest the concept of providing first, second and third supply units for spraying and supplying a **mist** of an abrasive slurry, a **mist** of additive **and** a **mist** of pure water, respectively. **Neither do Chamberlin et al.**

The Examiner, in the first full paragraph on page 4 of the April 18, 2002 Office Action, asserts that Chamberlin et al. disclose slurry injection in the form a mist. The relevance of that observation to the claimed invention is not apparent. Specifically, the claimed invention is not directed to simply supplying a mist of a slurry. Rather, the claimed invention requires the use of first, second and third supply units for spraying and supplying a **mist** of an abrasive slurry, a **mist** of additive **and** a **mist** of pure water, respectively. It is **not** apparent and the Examiner has **not** pointed out, as judicially required, particularly by "page and line", wherein either of the applied references, including the allegedly teaching reference to Chamberlin et al., discloses or even suggests the use of first, second and third supply unit for spraying and supplying a **mist** of an abrasive slurry, a **mist** of additive **and** a **mist** of pure water, respectively. *In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).* It logically follows that even **if** the

applied references were combined, the claimed invention would **not** result. *Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).*

Two further points should be noted. Firstly, the reference to Murphy et al. is not U.S. Patent 5,478,438 and indicated in the statement of the rejection, but U.S. Patent No. 5,478,435.

Secondly, the asserted motivation for combining Chamberlin et al. and Murphy et al. does not withstand scrutiny. Specifically, in accordance with the present invention, the abrasive grains contained in the abrasive slurry can be prevented when the polishing solution is mixed. Neither Chamberline et al. nor Murphy et al. disclose or suggest such an effect. Accordingly, the requisite "thorough and searching" factual inquiry to support the reason **why** one having ordinary skill in the art would have combined the references is lacking. *In re Lee, __F.3d __, 61 USPQ2d 1430, 1433, (Fed. Cir. 2002); Ecolochem Inc. v. Southern California Edison, Co. 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).*

It should, therefore, be apparent that the Examiner did **not** establish a prima facie basis to deny patentibility to the claimed invention under 35 U.S.C. §103. Applicants, therefore, submit that the imposed rejection of claims 1 through 19 under 35 U.S.C. §103 for obviousness predicated upon Murphy et al. in view of Chamberlin et al. is not factually or legally viable and, hence, solicit withdrawal thereof.

By the present Amendment, all objections and rejections have been overcome, and all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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APPENDIX

Claims 3, 5 and 10 now read as follows.

3. (Twice Amended) The apparatus according to claim 1, wherein each of said supply units comprises:

a tank for storing liquid;

a pipe for supplying said liquid from said tank to said mixing unit;

B1 a pump for supplying said liquid in said tank to said pipe at a pressure, or a gas supply unit for supplying a gas into said tank so as to supply said liquid in said tank to said pipe at a pressure;

a control unit for controlling the pressure of said liquid in said pipe at a flow rate; and

a spray unit for spraying said liquid supplied from said pipe into said mixing unit.

5. (Twice Amended) The apparatus according to claim 3, wherein said

B2 control unit includes a flow meter for measuring the flow rate of liquids in said pipe, said control unit controlling a rotating speed of said pump or controlling the pressure of said gas supplied from said gas supply unit on the basis of the results of measurements by said flow meter.

10. (Twice Amended) A method of supplying a polishing solution in an apparatus including a polishing solution supply system, the polishing solution supply system comprising:

B4 a polishing table for placing a semiconductor substrate on a major surface thereof;

a first supply unit for spraying and supplying a mist comprising abrasive slurry; a second supply unit for spraying and supplying a mist comprising additive; a third supply unit for spraying and supplying a mist comprising pure water; and a mixing unit for mixing the mist of abrasive slurry unit and the mist of pure water supplied from said third supply unit to form a polishing a mixture, said mixing unit supplying the polishing mixture onto said major surface of said polishing table;

B3 Cont'd

spraying and supplying each of said mist comprising abrasive slurry, said mist comprising additive and said mist comprising pure water into said mixing unit, and mixing them in said mixing unit to form a polishing mixture; and

supplying the polishing mixture onto said major surface of said polishing table.